

PM03

279-1380

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SEP - 3 1998

Ms. LuAnn Maloney  
FMC Corporation  
Agricultural Products Group  
1735 Market Street  
Philadelphia, PA 19103

Dear Ms. Maloney:

Subject: Revise per Agency letter dated November 21, 1997  
Thiodan 50WP Insecticide  
EPA Registration Number 279-1380  
Your submission dated June 22, 1998

The labeling referred to above, submitted in connection with a registration under FIFRA section 3(c)(7)(a), is acceptable and a stamped copy is enclosed for your records. Please make the following revisions at the next label printing:

- a) For Blueberries, revise the **Rate of Application** to read "3 pounds per acre in 300 gallons of water".
- b) In the Method of Application directions for Peachtree Borers and Lesser Peachtree Borers, add "after the leaves have dropped" following "...application post-harvest". Your letter of January 26, 1998 indicated that Dr. Ehn stated that the revised directions for control of these pests on Cherries, Plums, Prunes, Apricots, Nectarines, and Peaches should all be the same.
- c) For Strawberries - Northwest Use Only, delete the Note "Wear rubber gloves during the dipping operation.". The full set of personal protective clothing is required for this use and that requirement now appears in the Note.

Sincerely,

George T. LaRocca  
Product Manager 13  
Insecticide/Rodenticide Branch  
Registration Division (7505C)

Code 190

210  
Net Weight



# 50 WP Insecticide

For Agricultural or Commercial Use Only

EPA Reg. No. 279-1380

EPA Est. 279-

## Active Ingredient:

## By Wt.

*Endosulfan: (Hexachlorohexahydromethano-2,4,3-benzodioxathiepin 3-oxide) .....	50.0%
Inert Ingredients: .....	50.0%
	100.0%

\*Thiodan

KEEP OUT OF REACH OF CHILDREN

 **DANGER-POISON**   
**PELIGRO**

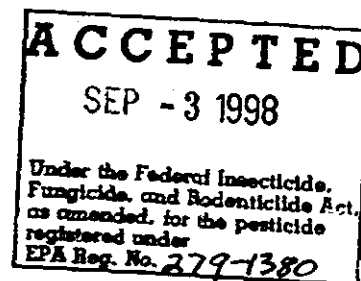
See Other Panels for Additional Precautionary Information.

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

# FMC

FMC Corporation  
Agricultural Products Group  
Philadelphia PA 19103

6/98



## STATEMENT OF PRACTICAL TREATMENT

**If swallowed:** Call a physician or Poison Control Center immediately. If possible, vomiting should be induced under medical supervision. Drink one or two glasses of water and induce vomiting by giving one (1) ounce of syrup of ipecac, if available, or by touching the back of the throat with a finger. Do not induce vomiting or give anything by mouth to a person who is unconscious or convulsing.

**If inhaled:** Remove victim to fresh air. Apply artificial respiration if indicated. Get medical attention.

**If on skin:** Wash skin with soap and water. Get medical attention.

**If in eyes:** Flush eyes with plenty of water. Call a physician immediately. Get medical attention.

**Note to Physician:** Endosulfan is a central nervous system stimulant absorbable by mouth, inhalation or through contact with skin. It may cause convulsions. There is no specific antidote. Diazepam I.V. is the drug of choice. Barbituric acid derivatives such as Phenobarbital may be used additionally. A neuromuscular blocking agent may be used if convulsions persist. This type of drug may be used only if complete control of respiration can be maintained. Epinephrine derivatives are absolutely contraindicated.

For Emergency Assistance Call (800) 331-3148.

## PRECAUTIONARY STATEMENTS

### Hazards to Humans (& Domestic Animals)

#### Danger

Fatal if swallowed or inhaled. Harmful if absorbed through skin. Causes moderate eye irritation. Do not breathe dust or spray mist. Avoid contact with skin, eyes or clothing. Do not contaminate food or feed. Keep out of reach of domestic animals. Food utensils such as spoons or measuring cups must not be used for food purposes after use in measuring pesticides.

#### Personal Protective Equipment

**Applicators and other handlers (other than mixers and loaders)** must wear: Coveralls over short-sleeved shirt and short pants, waterproof gloves, shoes plus socks, Protective eyewear, Chemical-resistant headgear for overhead exposure, and Respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

**Mixers and Loaders must wear:** Coveralls over short-sleeved shirt and short pants, waterproof gloves, shoes plus socks; Protective eyewear, Chemical-resistant headgear, a Chemical-resistant apron when cleaning equipment, mixing or loading, and a Respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

## Engineering Control Statement

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### User Safety Recommendations:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## Environmental Hazards

This product is toxic to fish, birds, and other wildlife. Birds feeding on treated areas may be killed. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Due to the risk of runoff and drift, do not apply within a distance of 300 feet of lakes, ponds, streams, and estuaries. Shrimp and crab may be killed at application rates recommended on this label. Do not apply where fish, shrimp, crab, and other aquatic life are important resources. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters. This product must not be used in areas where impact on threatened endangered species is likely. Contact your State Fish and Game Agency before applying this product. Apply this product only as specified on this label.

This pesticide is toxic to bees exposed to direct application. Applications should be timed to coincide with periods of minimum bee activity, usually between late evening and early morning.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Do not apply this product through any type of irrigation equipment.

## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, waterproof gloves, shoes plus socks, and chemical-resistant headgear for overhead exposure.

## STORAGE AND DISPOSAL

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### Pesticide Storage

Do not store in or around the home.

Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use, fold and roll back bags, clamp and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call FMC: (800) 331-3148.

To confine spill: If liquid, dike surrounding area or absorb with sand, cat litter or commercial clay. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

### Pesticide Disposal

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### Container Disposal

Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

This Product is not intended for Use in California under this label. See Supplemental Label for Directions for Use in California.

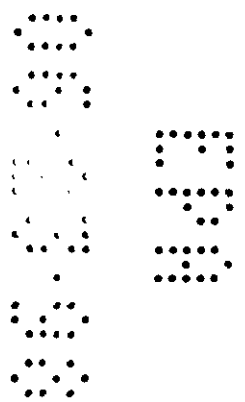
## GENERAL INSTRUCTIONS

Not for use or storage in or around the home.

Apply the listed amount per acre when insects first appear and repeat as required, unless otherwise noted, to maintain effective control. Use in sufficient water for thorough coverage of listed crops, unless otherwise noted. Coverage of upper and lower leaf surfaces is essential for good control. For ground application, apply recommended amount of pesticide in a minimum of 10 gallons of water per acre on vegetable or row crops, unless otherwise noted. Observe use limitations. If insect control is required beyond the following use patterns, supplement the control program with other suitable pesticides.

When applying this material by aircraft, mix the recommended amount with sufficient water to provide a minimum of 1 gallon of finished spray per acre on vegetable and field crops unless otherwise noted, and a minimum of 20 gallons of finished spray per acre on fruit and nut trees and on vines. When applying 4 pounds or more of Thiodan® 50 WP, mix in a minimum of 10 gallons of water.

Do not plant root crops other than carrots, potatoes, sweet potatoes, and sugar beets as follow-up crops. Observe days interval between last application and harvest indicated by number in ( ) following the crop name.



# Apples (21)

Insects Controlled	Rate of Application	Method of Application
Aphids (including Apple Aphid, Rosy Apple Aphid, Woolly Apple Aphid) Apple Rust Mite Green Fruitworm Tarnished Plant Bug Tentiform Leafminers White Apple Leafhopper (first generation)	1 pound per 100 gallons or a maximum of 5 pounds per acre	Applications made at pink and/or petal fall provide best control of Tarnished Plant Bug and Green Fruitworm. For best control of first generation White Apple Leafhopper, apply when nymphs first appear on leaves. If necessary, prior to petal fall, use 1½ pounds per 100 gallons to control Apple Aphids and Rosy Apple Aphids. For control of Tentiform Leafminers, make first application as soon as moth flight begins. A second application should be made 10 days later.
Do not feed pomace from treated apples to livestock. Do not feed cull fruits to animals or allow livestock to graze in treated orchards. Do not make more than 2 applications during the fruiting period. Do not make more than 3 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

# Apricots (21), Nectarines (21), Peaches (21)

Insects Controlled	Rate of Application	Method of Application
Peachtree Borer Lesser Peachtree Borer	1½ pounds per 100 gallons or 4 to 5 pounds per acre: <i>Pacific Northwest</i> —1 to 1½ pounds per 100 gallons <i>Southeastern States</i> —3 to 5 pounds per 100 gal.	Best control is obtained with a single application post-harvest after the leaves have dropped. Spray all bark areas from ground level to lower scaffold limbs.
Do not feed cull fruits to animals or allow livestock to graze in treated orchards. Do not make more than 2 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

# Apricots (30), Nectarines (30), Peaches (30)

Insects Controlled	Rate of Application	Method of Application
Aphids (including Black Cherry Aphid, Black Peach Aphid, Green Peach Aphid, Rusty Plum Aphid) Catfacing insects (Stink Bug type) Green Fruitworm Peach Silver Mite Peach Twig Borer	1 pound per 100 gallons or a maximum of 4 to 5 pounds per acre.	Make applications when insects appear or feeding is noticed.
Do not feed cull fruits to animals nor allow livestock to graze in treated orchards. Do not make more than 2 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

# Barley, Oats, Rye, Wheat

Insects Controlled	Rate of Application	Method of Application
Army Cutworm	1 pound per acre	Apply when small larvae are readily found in the field. For aerial application, use a minimum 2 gallons of water per acre.
Cereal Leaf Beetle (Illinois, Indiana, Michigan and Ohio only)	½ to 1 pound per acre.	Apply when small larvae are readily found in the field. For aerial application, use a minimum of 1 to 2 gallons of water per acre.
Aphids (including Russian Wheat Aphid)	1 to 1½ pounds per acre	Make applications when insects appear or feeding is noticed.
Do not apply after heads begin to form. Do not feed treated forage to livestock. Do not make more than 2 applications per year. Do not exceed a maximum of 1.0 lb. active ingredient (i.e., 2 pounds) per acre per year.		

# Beans, Succulent and Dry (except Lima Beans) (3) and Southern Field Peas (Succulent type, including Black-eyed Peas, Crowder Peas and Southern Peas) (3)

Insects Controlled	Rate of Application	Method of Application
Black Bean Aphid Bean Leaf Skeletonizer Cowpea Curculio Cucumber Beetles Flea Beetles Green Stink Bug Leafhoppers Mexican Bean Beetle	1 to 2 pounds per acre	Make applications when insects appear or feeding is noticed. For control of Cowpea Curculio, make 3 applications at 5-day intervals starting when the pods are ¼ inch long.
Aphids Armyworms Western Bean Cutworm Whitefly	2 pounds per acre	
Do not feed treated threshings or allow livestock to graze in treated fields. Do not use on Lima Beans that are to be removed from the field for processing. Do not make more than 3 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

# Blueberries

Insects Controlled	Rate of Application	Method of Application
Blueberry Bud Mite	3 pounds per 300 gallons of water	Apply immediately after harvest and repeat 6 to 8 weeks later.
Do not apply after buds are well formed. Do not make more than 2 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

# Broccoli (7), Brussels Sprouts (14), Cabbage (7), Cauliflower (14)

Insects Controlled	Rate of Application	Method of Application
Cabbage Aphid Cabbage Looper Cross-striped Cabbage-worm Diamondback Moth larvae Flea Beetles Harlequin Bug Imported Cabbageworm Leafhoppers Stink Bugs	1½ to 2 pounds per acre	Make applications when insects appear or feeding is noticed.
Armyworms Cutworms Whitefly	2 pounds per acre	
Do not make more than 4 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

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#### Carrots (7)

Insects Controlled	Rate of Application	Method of Application
Green Peach Aphid Leafhoppers	1 to 2 pounds per acre	Make application when insects appear or feeding is noticed.
Armyworms Flea Beetles Whitefly	2 pounds per acre	
Do not use tops for food or feed. Do not make more than one application per year. Do not exceed a maximum of 1.0 lb. active ingredient (i.e., 2 pounds) per acre per year.		

#### Celery (4)

Insects Controlled	Rate of Application	Method of Application
Green Peach Aphid Cabbage Looper Leafhoppers	1 to 2 pounds per acre	Make application when insects appear or feeding is noticed.
Armyworms Flea Beetles Whitefly	2 pounds per acre	
Do not make more than one application per year. Do not exceed a maximum of 1.0 lb. active ingredient (i.e., 2 pounds) per acre per year.		

#### Celery (7)

Insects Controlled	Rate of Application	Method of Application
Green Peach Aphid	1 pound per acre	Make applications when insects appear or feeding is noticed.
Do not make more than 2 applications per year. Do not exceed a maximum of 1.0 lb. active ingredient (i.e., 2 pounds) per acre per year.		

#### Cherries (21)

Insects Controlled	Rate of Application	Method of Application
Peachtree Borer Lesser Peachtree Borer	1½ pounds per 100 gallons or 4 to 5 pounds per acre; <i>Pacific Northwest:</i> 1 to 1½ pounds per 100 gallons	Best control is obtained with a single application post-harvest. Spray all bark areas from ground to lower scaffold limbs.
Black Cherry Aphid Green Fruitworm Plum Rust (Nursery) Mite	1 pound per 100 gallons or 4 to 5 pounds per acre	
<i>Pacific Northwest only:</i> Eyespotted Bud Moth Fruit Tree Leafroller	4 to 5 pounds per acre	For Bud Moth control apply at "popcorn" stage. For Leafroller control, apply during pre-pink stage of growth.
<i>Michigan only:</i> Mineola Moth	2 pounds per 100 gallons	Apply in the delayed dormant period.
Do not feed cull fruits to animals or allow livestock to graze in treated orchards. Do not make more than 2 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

#### Cherry, Peach, Plum Nursery Stock Dip

Insects Controlled	Rate of Application	Method of Application
Peachtree Borer	4 pounds per 40 gallons	Mix thoroughly. Immerse trees so that the roots and crowns are covered well above the grafting bud scar.
Full Personal Protective Equipment (PPE) requirements for applicators also apply to this dipping operation. Plant immediately or dry before returning stock to storage.		

#### Citrus (Non-Bearing Trees and Nursery Stock)

Insects Controlled	Rate of Application	Method of Application
Citrus Aphid	1 pound per 100 gallons or a maximum of 5 pounds per acre	Make applications when insects appear or feeding is noticed.
Do not apply to bearing trees or trees that will bear fruit within twelve months. Do not make more than 2 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

#### Collards (21)

Insects Controlled	Rate of Application	Method of Application
Aphids Cabbage Looper Diamondback Moth larvae Fall Armyworm Flea Beetles Harlequin Bug Imported Cabbageworm Leafhoppers	1½ to 2 pounds per acre	Make application when insects appear or feeding is noticed.
Whitefly	2 pounds per acre	
Do not make more than one application per year. Do not exceed a maximum of 1.0 lb. active ingredient (i.e., 2 pounds) per acre per year.		

#### Cotton

Insects Controlled	Rate of Application	Method of Application
Aphids	¾ to 1½ pounds per acre	Make applications when insects appear or feeding is noticed. For control of aphids, thorough coverage is important.
Boll Weevil	1 to 3 pounds per acre	
Bollworm Cabbage Looper Cotton Leafperforator Cotton Leafworm Flea-hoppers Lygus Bugs Stink Bugs Tobacco Budworm	2 to 3 pounds per acre	
Thrips	3 pounds per acre	
Whitefly	2 pounds per acre	
Applications may be made using ground or aerial application equipment.		
<p>The higher rate should be used under heavy pest pressure.</p> <p>Do not apply after bolls open.</p> <p>Do not graze meat or dairy animals in treated fields.</p> <p>Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.</p>		

**Cucumbers (2), Melons (2), Pumpkins (2), Summer and Winter Squash (2)**

Insects Controlled	Rate of Application	Method of Application
Aphids Cucumber Beetles Melonworm Pickworm Rindworm (on watermelons) Squash Beetle Squash Bug Squash Vine Borer Striped Flea Beetle	1 to 2 pounds per acre	Make applications when insects appear or feeding is noticed. For Squash Vine Borer control, apply weekly to flower buds, stems, and vines beginning when moths first appear.
Cabbage Looper Omnivorous Leafroller Whitefly	2 pounds per acre	
Do not make more than 6 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

**Eggplant (1)**

Insects Controlled	Rate of Application	Method of Application
Blister Beetle Colorado Potato Beetle Flea Beetles Green Peach Aphid Green Stink Bug	1 to 2 pounds per acre	Make applications when insects appear or feeding is noticed.
Whitefly	2 pounds per acre	
Do not make more than 2 applications per year. Do not exceed a maximum of 1.0 lb. active ingredient (i.e., 2 pounds) per acre per year.		

**Filberts (1)**

Insects Controlled	Rate of Application	Method of Application
Filbert Aphid Filbert Bud Mite Filbert Leafroller	1 pound per 100 gallons or 3 to 4 pounds per acre	Make applications when insects appear or feeding is noticed.
Do not graze livestock on orchard crops or grasses in treated areas. Do not make more than 2 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

**Grapes (7)**

Insects Controlled	Rate of Application	Method of Application
Grape Leafhopper Grape Phylloxera (leaf form) Rose Chafer	1 pound per 100 gallons or 2 to 3 pounds per acre	Make applications when insects appear or feeding is noticed.
Do not use on Baca No. 1, Baca Noir, Seibel 7053 (Chancellor), Seibel 8375 (Colobel), Seibel 13053 (Cascade) or Concord varieties as severe plant injury is likely to occur. Do not make more than 3 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

**Kale (21)**

Insects Controlled	Rate of Application	Method of Application
Cabbage Flea Beetle Harlequin Bug Imported Cabbageworm	1½ pounds per acre	Make application when insects appear or feeding is noticed.
Do not make more than one application per year. Do not exceed a maximum of 0.75 lb. active ingredient (i.e., 1½ pounds) per acre per year.		

**Lettuce (14)**

Insects Controlled	Rate of Application	Method of Application
Cabbage Looper Diamondback Moth larvae Green Peach Aphid Imported Cabbageworm Leafhoppers	1½ to 2 pounds per acre	Make applications when insects appear or feeding is noticed.
Armyworms Whitefly	2 pounds per acre	
On Head Lettuce: Do not exceed 3 applications after thinning. Remove wrapper leaves at harvest. On Leaf Lettuce: Do not make more than 2 applications per year. Do not feed crop refuse to livestock. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

**Mustard Greens (21)**

Insects Controlled	Rate of Application	Method of Application
Aphids Cabbage Looper Diamondback Moth larvae Fall Armyworm Flea Beetles Harlequin Bug Imported Cabbageworm Leafhoppers	1½ to 2 pounds per acre	Make application when insects appear or feeding is noticed.
Whitefly	2 pounds per acre	
Do not make more than one application per year. Do not exceed a maximum of 1.0 lb. active ingredient (i.e., 2 pounds) per acre per year.		

**Pears (7)**

Insects Controlled	Rate of Application	Method of Application
Green Fruitworm Tarnished Plant Bug	1 pound per 100 gallons or 4 to 5 pounds per acre	Make applications at white bud or petal fall when insects appear or feeding is noticed.
Pear Psylla	5 pounds per acre	Apply in a minimum of 10 gallons of water for aerial application or in 300 gallons of water for dilute application. Apply when adults are first observed or nymphs are small and repeat to maintain control.
Pear Rust Mite Conspense Stink Bug (foliar treatment)	1 pound per 100 gallons or 4 to 5 pounds per acre	Make applications when insects appear or feeding is noticed. Stink Bugs must be wet by spray to obtain control.
Conspense Stink Bug (soil treatment)	1 pound per 100 gallons; 200 to 400 gallons per acre	Apply to orchard floor and around trees prior to bloom.
Pear Leaf Blister Mite	¼ to 1 pound per 100 gallons	Apply to trees as a post harvest or dormant treatment.
Do not feed cull fruits to animals or allow livestock to graze in treated orchards. Do not make more than 2 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year. Note: Aerial application may not result in satisfactory control and should only be employed if impossible to apply by ground.		

### Peas (Succulent) (5)

Insects Controlled	Rate of Application	Method of Application
Pea Aphid Pea Weevil Loopers Stink Bug Colorado Potato Beetle	1 to 2 pounds per acre	Make applications when insects appear or feeding is noticed.
Use only on peas to be harvested by combine. Do not feed treated vines to livestock or allow livestock to graze in treated fields. Do not make more than 2 applications per year. Do not exceed a maximum of 2 lbs. active ingredient (i.e., 2½ quarts) per acre per year.		

### Pecans

Insects Controlled	Rate of Application	Method of Application
Black Pecan Aphid Pecan Nut Casebearer Spittlebug	1½ pounds per 100 gallons	Make applications when insects appear or feeding is noticed. For Casebearer, apply when eggs of first generation appear on the tips of the young nuts. Another application may be required after the second generation of eggs is deposited. For Spittlebug, apply when first leaves are half grown and repeat as required.
Pecan Leaf Phylloxera	1 to 1½ pounds per 100 gallons	Apply when nymphs appear and before they are enclosed in plant tissue. For high populations, use the higher rate.
Do not apply after shuck split. Do not graze livestock on orchard crops or grasses in treated areas. Do not make more than 2 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

### Peppers (1)

Insects Controlled	Rate of Application	Method of Application
Flea Beetles Green Peach Aphid Homworms Pepper Maggot	1 pound per acre	Make applications when insects appear or feeding is noticed.
Do not make more than 2 applications per year. Do not exceed a maximum of 1.0 lb. active ingredient (i.e., 2 pounds) per acre per year.		

### Peppers (4)

Insects Controlled	Rate of Application	Method of Application
Amyworms Flea Beetles Green Peach Aphid Homworms Leafhoppers Pepper Maggot	1 to 2 pounds per acre	Make applications when insects appear or feeding is noticed.
Whitefly	2 pounds per acre	
Do not make more than 2 applications per year. Do not exceed a maximum of 2.0 lbs. active ingredient (i.e., 4 pounds) per acre per year.		

### Pineapple (For Fresh Market Only) (7)

Insects Controlled	Rate of Application	Method of Application
Pineapple Fruit Mite	3 to 4 pounds per acre	Make applications when insects appear or feeding is noticed. Apply at intervals of 7 to 10 days, if necessary, particularly during the 40 day period of blooming.
Do not feed treated forage or pineapple by-products to livestock. Do not make more than 2 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

### Plums (7), Prunes (7)

Insects Controlled	Rate of Application	Method of Application
Fruitree Leafroller (Pacific Northwest Only)	1 pound per 100 gallons or 4 to 5 pounds per acre	Apply during pre-pink stage of growth when insects appear or feeding is noticed.
Aphids (including Hop Aphid, Leafcurl Plum Aphid, Thistle Aphid) Plum Rust (Nursery) Mite		For control of aphids, apply when eggs hatch during pre-bloom or petal fall. Summer applications should be made before leaves curl.
Peach Twig Borer	1 pound per 100 gallons or 4 to 5 pounds per acre	Make applications when insects appear or feeding is noticed.
Lesser Peachtree Borer Peachtree Borer	1½ pounds per 100 gallons or 4 to 5 pounds per acre <i>Pacific Northwest</i> 1 to 1½ pounds per 100 gallons or 4 to 5 pounds per acre	Best control is obtained with a single application post-harvest after the leaves have dropped. Spray all bark areas from ground level to lower scaffold limbs.
Do not allow livestock to graze on orchard crops or grasses in treated areas. Do not make more than 2 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

### Potatoes (1)

Insects Controlled	Rate of Application	Method of Application
Aphids Armyworms Colorado Potato Beetle Green Stink Bug Leaf-footed Bug Plant Bugs Potato Flea Beetles Potato Leafhopper Potato Tuberworm Threelined Potato Beetle	1 to 2 pounds per acre	Make applications when insects appear or feeding is noticed.
European Corn Borer Potato Psyllid	1½ to 2 pounds per acre	
False Chinch Bug Whitefly	2 pounds per acre	
Do not make more than 6 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

### Spinach (21)

Insects Controlled	Rate of Application	Method of Application
Amyworms Crown Mite Flea Beetles Green Peach Aphid Leafhoppers	1½ to 2 pounds per acre	Make application when insects appear or feeding is noticed.
Whitefly	2 pounds per acre	
Do not make more than one application per year. Do not exceed a maximum of 1.0 lb. active ingredient (i.e., 2 pounds) per acre per year.		

# Strawberries (4)

Insects Controlled	Rate of Application	Method of Application
Meadow Spittlebug Strawberry Aphid Tarnished Plant Bug Whitefly	2 pounds per acre	Make applications when insects appear or feeding is noticed. Do not reapply within 15 days or more than twice during a 35 day period when fruit is present.
Cyclamen Mite	4 pounds per acre in 400 gallons of water	Make applications when insects appear or feeding is noticed. Thoroughly wet the foliage, stem and crown of the plant. For multiple applications, do not apply at intervals less than 35 days when fruit is present.

Do not make more than 3 applications per year.  
Do not exceed a maximum of 3.0 lb. active ingredient (i.e., 6 pounds) per acre per year.

## Strawberries—Northwest Use Only

Insects Controlled	Rate of Application	Method of Application
Garden Symphylan (aids in reducing damage)	2 pounds per 100 gallons	Mix thoroughly. Dip entire plant. When immersing bundles of plants, make certain any trapped air is forced out to assure thorough wetting of entire plant.

Wear Rubber gloves during the dipping operation.  
Full Personal Protective Equipment (PPE) requirements for applicators also apply to this dipping operation.  
Drain and allow plants to dry before setting them out in the field.

## Sweet Corn (Fresh Vegetable Use Only) (1)

Insects Controlled	Rate of Application	Method of Application
Corn Leaf Aphid Whitefly	2 pounds per acre	Make applications when insects appear or feeding is noticed.
Corn Earworm	3 pounds per acre	Apply when silks first appear and continue until they begin to dry. Allow 5 days between applications.

Do not apply to Sweet Corn to be processed.  
Do not feed treated forage or ensilage to livestock or allow livestock to graze in treated fields.  
Do not make more than 3 applications per year.  
Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.

# Sweet Potatoes (1)

Insects Controlled	Rate of Application	Method of Application
Sweet Potato Flea Beetle Sweet Potato Weevil	1 pound per acre	Make applications when insects appear or feeding is noticed. For flea beetle control, begin applications shortly after transplanting or as soon as flea beetles appear. For Sweet Potato Weevil control, apply in sufficient water for complete coverage. Applications may be made to transplants in the nursery and/or in the field. Repeat applications may be made as necessary. For Sweet Potato Weevil control in a clean up program, apply at a rate of 4 pounds per acre to the soil under the sweet potato nursery beds and to the area immediately surrounding the nursery beds. Do not place the seed tubers directly on the ground treated with Thiodan®.
Whitefly	2 pounds per acre	Make applications when insects appear or feeding is noticed.
Banded Cucumber Beetle larvae (aids in control) (South Central States and Puerto Rico Only)	2 to 4 pounds per acre broadcast or ½ to 1½ pounds per acre on a 16 inch band over the row (48 inch row spacing)	Work into the soil to a depth of approximately 3 inches. Treatment should be made just prior to plant set.

Do not feed cull potatoes to livestock or allow livestock to graze in treated fields.  
Do not make more than 3 applications per year.  
Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.

## Tobacco (5)

Insects Controlled	Rate of Application	Method of Application
Aphids (including Green Peach Aphid, Tobacco Aphid) Budworm Cabbage Looper Flea Beetles Hornworms	Seed Bed: 1 pound per 100 gallons	Make applications when insects appear or feeding is noticed. Apply about 6 gallons of finished spray per 100 square yards.
Green June Bug larvae	Plant Bed: ½ pound per 100 gallons	Make applications when insects appear or feeding is noticed. Drench at a rate of 1 gallon per square yard.
Aphids (including Green Peach Aphid, Tobacco Aphid) Budworm Cabbage Looper Flea Beetles Green June Bug larvae Hornworms	Field: 1 to 2 pounds per acre	Make applications when insect activity or feeding is noticed.
Stink Bugs	Field: 2 to 3 pounds per 100 gallons	

Do not make more than 6 applications per year.  
Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.



## Tomatoes (Field and Greenhouse) (2)

Insects Controlled	Rate of Application	Method of Application
Aphids Blister Beetles Colorado Potato Beetle Flea Beetles Tomato Hornworm	1 to 2 pounds per acre	Make applications when insects appear or feeding is noticed.
Cabbage Looper Stink Bugs	1½ to 2 pounds per acre	
Tomato Fruitworm Tomato Russet Mite Whitefly Yellowstriped Armyworm	2 pounds per acre	
Whitefly	1 pound per 100 gallons of water. Use 100 to 200 gallons of spray per acre.	Make applications when insects appear or feeding is noticed. Higher spray volumes may be necessary for thorough coverage when high Whitefly populations exist.
Do not make more than 6 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

## Walnuts

Insects Controlled	Rate of Application	Method of Application
Walnut Aphid	3 to 4 pounds per acre. Apply in a minimum of 100 gallons of water per acre.	Make applications when insects appear or feeding is noticed.
Do not apply after husk split. Do not graze livestock on orchard crops or grasses in treated areas. Do not make more than 2 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

## COMMERCIALLY GROWN ORNAMENTALS

### Ornamental Plants

#### Leatherleaf Fern (Leather Holly Fern)

Insects Controlled	Rate of Application	Method of Application
Leatherleaf Fern Borer	1 pound per 100 gallons (1 tablespoon per gallon)	Begin treatment when first larval feeding is observed in the mid-vein area at the base of the leaflets. Repeat at intervals of 2 to 3 weeks as necessary.
Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

#### Ornamentals (Greenhouse, and Out-of-Doors)

Insects Controlled	Rate of Application	Method of Application
Aphids Cyclamen Mite Rose Chafer Whitefly	1 pound per 100 gallons (1 tablespoon per gallon)	Make applications when insects appear or feeding is noticed.
Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides. On chrysanthemums, best results will be obtained if applied before plants flower. Do not apply to "Bonafon Deluxe", "Fred Shoemith", and "White Knight" chrysanthemums as injury may result. Do not use on Birch trees. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

## Ornamental Trees and Shrubs

### Dogwood, Lilac

Insects Controlled	Rate of Application	Method of Application
Dogwood Borer Lilac Borer	1 to 2 pounds per 100 gallons (1-2 tablespoons per gallon)	Apply in early June and repeat in 10 to 14 days. Drench all bark areas down to the ground level.
Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

### Douglas Fir (Grown for Ornamentals, Nursery Stock or Christmas trees)—Pacific Northwest Only

Insects Controlled	Rate of Application	Method of Application
Aphids Cooley Spruce Gall Adelgid Douglas Fir Needle Midge	1 pound per 100 gallons (1 tablespoon per gallon)	Make applications when insects appear or feeding is noticed. For control of gall adelgid, apply when white cottony tufts appear. For control of needle midge, apply in late April or early May just before buds open.
Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

### Pines (Austrian, Jack, Red, Scotch, White)

Insects Controlled	Rate of Application	Method of Application
Zimmerman Pine Moth	1½ pounds per 100 gallons (1½ tablespoons per gallon)	Apply in mid-April and again, if necessary, in late fall. Thoroughly wet bark and main stem, especially where branches join main stem.
Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

### Shade Trees (except Birch), Shrubs

Insects Controlled	Rate of Application	Method of Application
Aphids	1 pound per 100 gallons (1 tablespoon per gallon)	Make applications when insects appear or feeding is noticed.
Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

### Spruce (New England Area Only)

Insects Controlled	Rate of Application	Method of Application
Spruce Gall Aphid	1 pound per 100 gallons (1 tablespoon per gallon)	Apply in late April or early May when aphids are present but before galls are formed.
Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.		

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**Taxus**

Insects Controlled	Rate of Application	Method of Application
Taxus Bud Mite	1 pound per 100 gallons (1 tablespoon per gallon)	Make 3 to 5 applications beginning in mid-May. Thoroughly spray foliage, twigs, and bark.
Black Vine Weevil	2 pounds per 100 gallons (2 table-spoons per gallon)	Spray thoroughly and drench soil under the plants. Apply when the weevils first appear and repeat in 14 days.

Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides.  
Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 6 pounds) per acre per year.

**Dealers Should Sell in Original Packages Only.**

**Terms of Sale or Use:** On purchase of this product buyer and user agree to the following conditions:

**Warranty:** FMC makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Except as so warranted, the product is sold as is. Buyer and user assume all risk of use and/or handling and/or storage of this material when such use and/or handling and/or storage is contrary to label instructions.

**Directions and Recommendations:** Follow directions carefully. Timing and method of application, wather and crop conditions, mixture with other chemicals not specifically recommended and other influencing factors in the use of this product are beyond the control of the seller and are assumed by the buyer at his own risk.

**Use of Product:** FMC's recommendations for the use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice.

**Damages:** Buyer's or user's exclusive remedy for damages for breach of warranty or negligence shall be limited to direct damages not exceeding the purchase price paid and shall not include incidental or consequential damages.

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